WHAT IS CLAIMED IS:

1. An information recording apparatus comprising:

a laser light source;

a dividing unit which divides a laser light emitted from the laser light source in two laser lights;

a one-dimensional spatial modulating unit which applies one-dimensional spatial modulation to one of the two divided laser lights based on recording information;

a recording optical system which irradiates the spatial-modulated laser light to a recording medium as a signal light and irradiates the other one of the two divided laser lights to the recording medium as a reference light, thereby to record the recording information on the recording medium; and

a moving unit which moves the recording medium with respect to the recording optical system such that an irradiation position of the signal light and the reference light relatively moves on the recording medium, wherein the recording optical system records the recording information while the moving unit is moving the recording medium.

2. The information recording apparatus according to claim 1, wherein the one-dimensional spatial modulating unit comprises a grating configuration having a plurality of gratings, and wherein the one-dimensional spatial modulating unit is positioned such that an alignment direction of irradiation images produced by the plurality of gratings is perpendicular to the moving direction of the recording medium by the moving unit.

3. The information recording apparatus according to claim 2, wherein the recording medium is a disc, wherein the moving unit rotates the disc, and wherein the one-dimensional spatial modulating unit is positioned such that the alignment direction of the irradiation images produced by the plurality

of gratings corresponds to a radial direction of the disc.

4. The information recording apparatus according to claim 1, wherein the one-dimensional spatial modulating unit comprises a grating configuration having a plurality of gratings, and wherein the one-dimensional spatial modulating unit is positioned such that an alignment direction of irradiation images produced by the plurality of gratings has a predetermined angle with respect to a direction perpendicular to the moving direction of the recording medium by the moving unit.

5. The information recording apparatus according to claim 4, wherein the recording medium is the disc, wherein the moving unit rotates the disc, and wherein the one-dimensional spatial modulating unit is positioned such that the alignment direction of the irradiation images produced by the plurality of gratings has a predetermined angle with respect to the radial direction of the disc.

6. The information recording apparatus according to claim 1, further comprising a unit which controls a light quantity of the laser light from the laser light source based on the recording information.

7. An information reproducing apparatus comprising:

a laser light source;

a reproducing unit which irradiates a laser light emitted from the laser light source to a recording medium as a reference light, and which reproduces recording information recorded on the recording medium based on the laser light transmitted through or reflected by the recording medium; and

a moving unit which moves the recording medium with respect to a recording optical system such that an irradiation position of the reference light relatively moves on the recording

medium, wherein the reproducing unit reproduces the recording information while the moving unit is moving the recording medium.

8. An information recording method comprising:

a dividing process which divides a laser light emitted from a laser light source in two laser lights;

a modulating process which applies one-dimensional spatial modulation to one of the two divided laser lights based on recording information;

a recording process which irradiates the spatial-modulated laser light to a recording medium as a signal light and irradiates the other one of the two divided laser lights to the recording medium as a reference light, thereby to record the recording information on the recording medium; and

a moving process which moves the recording medium with respect to a recording optical system such that an irradiation position of the signal light and the reference light relatively moves on the recording medium, and wherein the recording process is executed while the recording medium is being moved by the moving process.

9. An information reproducing method comprising:

a reproducing process which irradiates a laser light emitted from a laser light source to a recording medium as a reference light, and which reproduces recording information recorded on the recording medium based on the laser light transmitted through or reflected by the recording medium; and

a moving process which moves the recording medium with respect to a recording optical system such that an irradiation position of the reference light relatively moves on the recording medium, wherein the reproducing process is executed during the recording medium is being moved by the moving process.

10. An information recording medium on which the

recording information is recorded by the information recording apparatus according to claim 1.

11. An information recording apparatus comprising:

a laser light source;

a one-dimensional spatial modulating unit which applies one-dimensional spatial modulation to a laser light emitted from the laser light source based on recording information;

a recording optical system which irradiates a light mainly including luminance component of the spatial-modulated laser light to a recording medium as a reference light and irradiates a light mainly including phase component of the spatial-modulated laser light to the recording medium as a signal light, thereby to record the recording information on the recording medium; and

a moving unit which moves the recording medium with respect to the recording optical system such that an irradiation position of the signal light and the reference light relatively moves on the recording medium, wherein the recording optical system records the recording information while the moving unit is moving the recording medium.

12. The information recording apparatus according to claim 11, wherein the one-dimensional spatial modulating unit comprises a grating configuration having a plurality of gratings, and wherein the one-dimensional spatial modulating unit is positioned such that an alignment direction of irradiation images produced by the plurality of gratings is directed perpendicular to the moving direction of the recording medium by the moving unit.

13. The information recording apparatus according to claim 11, wherein the one-dimensional spatial modulating unit comprises a grating configuration having a plurality of gratings,

and wherein the one-dimensional spatial modulating unit is positioned such that an alignment direction of the irradiation images produced by the plurality of gratings has a predetermined angle with respect to a direction perpendicular to the moving direction of the recording medium by the moving unit.

14. The information recording apparatus according to claim 11, further comprising a unit which controls a light quantity of the laser light from the laser light source based on the recording information.

15. An information recording method comprising:

a modulating process which applies one-dimensional spatial modulation to a laser light emitted from a laser light source based on recording information;

a recording process which irradiates a light mainly including luminance component of the spatial-modulated laser light to a recording medium as a reference light and irradiates a light mainly including phase component of the spatial-modulated laser light to the recording medium as a signal light, thereby to record the recording information on the recording medium; and

a moving process which moves the recording medium with respect to a recording optical system such that an irradiation position of the signal light and the reference light relatively moves on the recording medium, wherein the recording process is executed while the recording medium is being moved by the moving process.

16. An information recording medium on which the recording information is recorded by the information recording apparatus according to claim 11.